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EXAMINER

LAM, THANH

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 04/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/649,144**

Applicant(s)  
**Kim et al.**

Examiner  
**Thanh Lam**

Art Unit  
**2834**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 20) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, and 10-22, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumakura.

Kumakura discloses a circular permanent magnet array comprising a plurality of elongate magnets (29) each having a longitudinal axis, the magnets arranged around a common central axis (9) of rotation with the longitudinal axes located parallel to and radially offset from the axis of rotation; a nonmagnetic magnetic holder (30) for maintaining the magnets in a fixed position, the magnet holder being made of a material selected from the group consisting of conventional plastic (resin).

Regarding claim 2, Kumakura discloses the plurality of magnets includes a first set having a predetermined number of magnets equally spaced around the axis of rotation, and a second set having the same predetermined number of magnets, each of the magnets of the second set being axially aligned with a corresponding magnet in the first set.

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Regarding claim 3, Kumakura discloses all of the magnets are rare earth magnets (well known).

Regarding claim 4, Kumakura discloses the magnet holder includes a retainer generally surrounding each of the magnets, and a separate liner located between the magnets and the inner surface of the rotor.

Regarding claim 5, Kumakura discloses the magnets each have two ends and an alignment feature provided on at least one the ends to locate the magnet in a predetermined orientation with respect to the holder.

Regarding claim 6, Kumakura discloses the alignment feature comprises a stepped portion.

Regarding claim 7, Kumakura discloses the alignment feature comprises a groove.

Regarding claim 8, Kumakura discloses each of the magnets is symmetrical about its longitudinal axis.

Regarding claim 10, Kumakura discloses each of the magnets has a square cross-section.

Regarding claim 11, Kumakura discloses an electric machine comprising: a rotor (4) having a first bore along a central axis of rotation thereof, the first bore defining an inner surface of the rotor; a plurality of elongate magnets (29) located within the first bore adjacent to the inner surface and arranged around the axis of rotation; a magnet holder (30) for securing the magnets to the rotor, the magnet holder being a separate piece from the rotor and having a second bore; a stator (5) fixedly located within the rotor.

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Regarding claim 12, Kumakura discloses the rotor is a composite structure.

Regarding claim 13, Kumakura discloses the plurality of magnets are located directly against the inner surface of the rotor.

Regarding claim 14, Kumakura discloses the inner surface of the rotor includes a substantially flat facet for each of the plurality of magnets.

Regarding claim 15, Kumakura discloses the inner surface of the rotor has a predetermined radius and wherein the plurality of magnets each has a generally square cross-section with one side having a convex radius matching the predetermined radius.

Regarding claim 16, Kumakura discloses the plurality of magnets includes a first set having a predetermined number of magnets equally spaced around the axis of rotation, and a second set having the same predetermined number of magnets, each of the magnets of the second set being axially aligned with a corresponding magnet in the first set.

Regarding claim 17, Kumakura discloses all of the magnets are rare earth magnets (well known).

Regarding claim 18, Kumakura discloses the magnet holder includes a retainer generally surrounding each of the magnets, and a separate liner located between the magnets and the inner surface of the rotor.

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Regarding claim 19, Kumakura discloses the magnets each have two ends and an alignment feature provided on at least one the ends to locate the magnet in a predetermined orientation with respect to the holder.

Regarding claim 20, Kumakura discloses the alignment feature comprises a stepped portion (16 fig. 4).

Regarding claim 21, Kumakura discloses the alignment feature comprises a groove.

Regarding claim 22, Kumakura discloses each of the magnets is symmetrical about its longitudinal axis.

Regarding claim 24, Kumakura discloses each of the magnets has a square cross-section.

Regarding claims 25-26, the method claimed language is counter part of the apparatus claimed language. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to develop a particular method for the disclosed apparatus of Kumakura.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 9 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumakura in view of Bitterly et al.

Kumakura et al. disclose every aspect of claimed invention except for each of the magnets has a circular cross-section.

Bitterly discloses magnets (74) has a circular cross-section.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the magnets of Kumakura and utilize the circular magnets as taught by Bitterly et al. to secure the magnets in desired positions.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claim 1-26 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3431.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.

A handwritten signature in black ink, appearing to read 'Thanh Lam', with a stylized, cursive script.

Thanh Lam

April 12, 2002